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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,100	12/21/2000	John M. Mocenigo	03493.00154	6688

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EXAMINER

PEUGH, BRIAN R

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/741,100

Applicant(s)

MOCENIGO, JOHN M.

Examiner

Brian R. Peugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Office Action is in response to applicant's communication filed May 24, 2004, in response to PTO Office Action dated February 24, 2004. The applicant's remarks and amendment to the specification and/or claims were considered with the results that follow.

Claims 1-15 have been presented for examination in this application. In response to the last Office Action, claims 1, 6, 9, 11, and 14 have been amended.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 6, 8, 9, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berliner (US# 5,806,085) in view of Bereznyi et al. (US# 6,449,695).

Regarding claims 1, 6, and 11, Berliner teaches a system and method for **file retrieval and caching** within a disk system. Berliner teaches that caching data from randomly selected files such as databases (col. 4, lines 22-25). A **data request** for data found on the CD-ROM drive is **checked first to see if said requested data is found within the cache**, where **the claimed parameter** could correspond to the block number of the request or request address (col. 5, lines 31-41). If a cache miss occurs for said request (**data not previously requested**), the data is loaded from the CD-ROM file system into the cache. The **n-dimensional parameter space** is interpreted as a cache, where a cache is notoriously well known to be highly configurable and contain at least one ($n=1$) row or column for data storage. A mini-database is used to identify data blocks within the cache which pertain to the file being cached, which is used to link the cache and CD-ROM file system (col. 6, lines 2-10). The mini-database **maps** any randomly accessed block of data within the cached file and disk file system (col. 4, lines 25-33).

Specifically regarding claim 11, a **processor (1)** is shown that is incorporated within a larger client-server arrangement (col. 3, line 59 – col. 4, line 3).

The difference between the claimed subject matter and that of Berliner is that the claims recite determining whether the data item had been requested during a predetermined amount of time. Bereznyi et al. teaches **checking if a data item has been requested within a predetermined amount of time**. Bereznyi et al. teaches that the data item may be loaded upon determining that the data item had not been requested within the predetermined amount of time (col. 10, line 63 – col. 11, line 22).

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Therefore it would have been obvious to one of ordinary skill in the art having the teachings of Berliner and Bereznyi et al. before him at the time the invention was made to modify the caching system of Berliner to include the predetermined timing system of Bereznyi et al., because then a system for cache space conversation could be implemented for better cache performance, as taught by Bereznyi et al. (col. 11, lines 1-4).

Regarding claims 3, 8, and 13, Bereznyi et al. teaches a cache controller for checking the time for which a data item has been stored within the cache. **If the item has existed for a period of time greater than the time limit the data item is removed from the cache** (col. 11, line 60 – col. 12, line 3).

Regarding claims 4, 9, and 14, although Bereznyi et al. does not specifically recite a **channel for error messaging** to the requestor, an error message is returned to the requester when a specified data item is not located (col. 26, lines 31-33). Therefore, it would be inherent of the Bereznyi et al. system that the error message would be returned to the requester via a bus, or channel, as claimed.

Claims 2, 5, 7, 10, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berliner (US# 5,806,085) and Bereznyi et al. (US# 6,449,695) as applied to claims 1, 3, 4, 6, 8, 9, 11, 13, and 14 above, and further in view of Singhal et al. (US# 6,148,300).

Berliner teaches that the mini-database can contain cache consistency information, such as time of last file update (col. 5, lines 55-63). The difference between the claimed subject matter and that of Berliner is that the claims recite that requestors are queued until an initial, or previous, request has concluded (claims 2, 7, and 12) and that if a previous request for the same data is currently being carried out, the current request is queued until the previous request has been completed (claims 5, 10, and 15). Singhal et al. teaches a data locking system. Singhal et al. teaches that if a memory location is not locked, the requestor can acquire the lock associated with the requested data. If the location is currently locked when **another (initial) request** for the data at the location is made, the second requestor may wait until the memory location, and data, becomes available (col. 6, lines 13-22). Also, **a queue is taught for holding subsequent requestors** of a current memory location's piece of data (col. 6, lines 32-47). Therefore it would have been obvious to one of ordinary skill in the art having the teachings of Berliner, Bereznyi et al., and Singhal et al. before him at the time the invention was made to modify the consistency scheme of Berliner and Bereznyi et al. to include the locking mechanism of Singhal et al., because then an system for further data consistency and coherency, leading to a greater chance of receiving the correct data upon request, could be achieved as taught by Singhal et al.

Response to Arguments

Applicant's arguments filed May 24, 2004 have been fully considered but they are not persuasive.

Applicant has argued on pages 7-10 against the combination of the Berliner and Bereznyi et al. references.

Applicant has cited on page 7 the Berliner teaches that "...links between the LANs are slower than the interconnection between nodes in the LAN" (page 7, para. 4). Applicant has cited at the top of page a quotation from Berliner regarding the caching of data:

"Consequently, caching of data read over a network can generally increase system performance both by reducing data link loading and by providing the end user with a cache of rapidly accessible data" (col. 1, lines 62-65).

Applicant further cites that "...Berliner's invention provides creating mini-databases on a local hard disk drive of the end user. Therefore, the intent and purpose of Berliner's invention is to provide a local hard disk drive that receives a mapping of data from a cache. The reason for having the local disk drive is to prevent the need for re-transmission of data over a network" (page 8, para. 1)". The Applicant then states that "...the purpose and context of Berliner prevents one of skill in the art from having any motivation to combine his teachings with Bereznyi et al. This is because Bereznyi et al. focus on a distributed cache system." (page 8, para. 2, lines 1-3).

The Examiner disagrees with Applicant's conclusion regarding the purpose of the Berliner reference. The Examiner would like to point out that Berliner first recites that caching increases system performance (as noted above and cited by the Applicant in their remarks). Next Berliner recites:

"The invention includes both a non-volatile caching system for rotating magnetic media such as a hard disk drive and a method for implanting the non-volatile caching system. The caching system is designed so that cached data is retained even in the event of system shut-down and re-boot." (col. 4, lines 16-22).

Thus, Berliner teachings local data caching on non-volatile media (e.g. hard drives) for the purpose of retaining data in the even of a system shut-down or re-boot. The caching of data also reduces data link loading over slower LAN networks as well as increasing data accessibility as taught by Berliner (col. 1, lines 43-65).

The Examiner is unclear as to the Berliner teaching of "re-transmission of data", since the reference does not appear to teach the "re-transmission of data". Also, the Examiner would like to point out that it is well known within the art that data is retained within a cache, volatile or non-volatile, in order to prevent re-transmitting the data each time the data is requested by a user from a server.

The Applicant further recites on page 9 that "...Berliner's entire purpose is to take a local cache database and provide a local hard disk where the mini-database of cached data may be stored. Berliner teaches that transmitting data over even a LAN network is bandwidth-limited and thus not desirable. In contrast, Bereznyi et al. teach a distributed caching system where cached data is transmitted via networked caches" (page 9, para. 1, lines 3-7). As previously noted by the Examiner, although Berliner does recite that "...data links between LANs of a distributed processing network are slower than the interconnections between the nodes" (col. 1, lines 45-47), Berliner further teaches that the caching of data is done in response to bandwidth limitations in order to increase the system performance (col. 1, lines 43-65). Thus, the Examiner

believes that the combination of Berliner and Bereznyi et al. is proper due to their local caching of data, and especially for implementing the space consolidation system for better cache performance as taught by Bereznyi et al. (col. 11, lines 1-4).

Applicant next argues on pages 10-11 regarding the Singhal et al. reference that "...given their focus on controlling access to computer memory, the concept of caching is only given a passing reference" (page 10, para. 3, lines 5-7). The Applicant further recites that "...the only mention of caching in the disclosure relates to the cache existing in the computer system where figure 3 is discussed and where the cache stores a copy of the state of a memory lock" (page 10, para. 3, lines 7-9), and that "there is simply no motivation to incorporate the teachings of Singhal et al. that related to the hybrid queuing and locking for computer memory access with the local hard disk cache of Berliner or the distributed caching system of Bereznyi et al. The focus of Singhal et al. is only passing in terms of any caching operation" (page 11, para. 1).

The Examiner is unclear with Applicant's assertion assertions of the Singhal et al. reference where "caching is only given a passing reference". The Examiner has introduced the Singhal et al. reference in order to teach the request queuing operations as required by claims 2, 5, 7, 10, 12, and 15. The Examiner would like to point out that these claims fail to recite caching, and that the inclusion of a caching system within the Singhal et al. reference further strengthens the similarities, and thus combination, of the Singhal et al. reference with the Berliner and Bereznyi et al. references.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

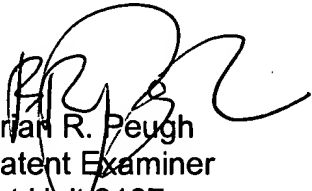
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Peugh whose telephone number is (571) 272-4199. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Friday's from 7:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks, can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brian R. Peugh
Patent Examiner
Art Unit 2187
11/29/04



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